

From: [LACEY David](#)
To: [Eric Blischke/R10/USEPA/US@EPA](#); [Chip Humphrey/R10/USEPA/US@EPA](#); [Rene Fuentes/R10/USEPA/US@EPA](#); [Kristine Koch/R10/USEPA/US@EPA](#)
Subject: FW: Rhone Poulenc Groundwater Discharge to the Willamette River
Date: 02/03/2010 03:22 PM
Attachments: [April 7, 2009 SLLI-DEQ-EPA Meeting Summary.pdf](#)
[RP-Deep basalt VOC data.pdf](#)

Eric, Chip, Rene, and Kristine,

Attached are the results of the deep basalt groundwater investigation conducted by Rhone-Poulenc (RP). I'm not sure what EPA's expectations are in regard to any additional work in-River related to the RP site or if you are expecting anything from RP regarding this work. From my initial conversations with RP, I do not think that they believe any additional work is needed to satisfy any EPA data needs for the in-river RI/FS. DEQ would like to discuss if EPA has any expectations for additional in-River work for the RP site. If not, DEQ would like to discuss the uncertainty associated with the potential larger (undefined) RP groundwater discharge area in relation to the PH RI/FS. I think Rene and Kristine recently discussed this with RP.

As you may recall, this data was collected in order to further understand the potential of RP-COIs to discharge to the Willamette River in areas outside of the areas defined by the Lower Willamette Group transition zone water investigation (e.g., sand patches near River Mile 7 identified by the LWG). RP submitted their "Evaluation of Groundwater Discharge to the Willamette River" on October 1, 2007. In that letter they stated that no further in-water investigation was needed, and that their proposed pump and treat system would address the discharge of VOCs to the river through the sand patches. The source control effectiveness of the RP proposed NFAISCM (pump and treat system) is still being evaluated by DEQ especially in light of the recent basalt findings.

EPA responded to RP's evaluation in a October 24, 2008 letter. In that letter EPA stated that it is likely that the area of groundwater discharge extends beyond the areas identified by the LWG. EPA also said that further investigation was not needed for the RI or BRA, but further delineation of groundwater discharge areas is required to support the Portland Harbor Feasibility Study. In particular EPA did not agree that the groundwater pathway was limited solely to areas where a deep alluvial gravel zone are present, but may also occur across a broader area as a result of transport through the fractured basalt.

This letter was followed by a meeting with EPA (Chip, Rene, and Kristine), DEQ and RP. At this meeting EPA stated that additional TZW data is not needed for the FS but would be needed for remedial design. EPA and DEQ stated their concerns regarding groundwater discharge to the River. RP agreed to provide the following:

- graphical representation of gw discharge from the basalt to the river and compare against in-River data to evaluate if additional TZW sampling is needed for remedial

design.

- install deep basalt wells along the river to address EPA's concerns of groundwater discharge to the river.

RP has not provided the graphical representation or TWZ evaluation to DEQ. DEQ has not talked about a schedule for this submittal with RP, but I think RP is planning on waiting until after the SCE is submitted, I haven't heard back from them on this yet. If you would like RP to submit this before the SCE please advise either RP or DEQ.

The completed basalt investigation shows that the basalt underlying the deep alluvial gravel zone is highly weathered and fractured. This is likely the result of shattering in the area from local faults. The fracturing/weathering extents from the top of basalt at 60' bgs down to >200' bgs and COIs were detected all the way down. VOCs exceeded SLVs to a depth of 171' bgs with 1,2-Dichlorobenzene at 345 ug/L (BRA TRV is 14 ug/L) and Chlorobenzene at 94 ug/L (BRA TRV is 64 ug/L). These wells have recently been sampled for the complete RP-COI list, preliminary results are expected in March, however sampling of the wells screened at the top of the basalt are generally non-detect dioxins and very low for pesticides (in the 0.1 ng/L range and sporadic).

The results indicate that there is an extensive zone of fractured basalt that is contaminated with VOCs and likely low level pesticides. From initial conversations with RP they feel that the fractured basalt has a low permeability due to weathering and that significant contamination is not moving through this zone or discharging to the River. They have not provided any data to support this conclusion to date. RP is currently working on updating the conceptual model but don't expect any additional in-River data will be needed.

I have attached a VOC results from discrete sampling during well installation and a copy of the meeting notes from April 7, 2009.

David Lacey
Oregon Department of Environmental Quality
Northwest Region
2020 SW Fourth Ave., Suite 400
Portland, Oregon 97201-4987
Phone 503-229-5354
Fax 503-229-6945

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